CLAIMS

WHAT IS CLAIMED IS:

1. A process for forming polyolefin drag reducing agents by polymerizing at least one olefin monomer in the presence of at least one catalyst, wherein the improvement comprises:

isomerizing the at least one olefin monomer prior to polymerizing the at least one olefin monomer in the presence of at least one catalyst.

2. The process of claim 1, wherein the at least one olefin monomer includes at least one alpha olefin monomer.

3. The process of claim 2, wherein the at least one alpha olefin monomer comprises homopolymers, terpolymers or copolymers.

4. The process of claim 2, wherein the at least one alpha olefin monomer comprises co-polymers of 1-hexene and 1-dodecene alpha olefins or co-polymers of 1-octene and 1-tetradodecene alpha olefins.

5. A process for forming a drag reducing agent comprising a substantially non-crystalline, ultra-high molecular weight polyolefin, the process comprising:

isomerizing olefin monomers to form isomerized olefin monomers,

wherein the isomerized olefin monomers are substantially free of branched olefin monomers;

contacting isomerized olefin monomers with a catalyst system in a reactant mixture, wherein the catalyst system includes at least one catalyst and at least one co-catalyst; and

polymerizing the isomerized olefin monomers at a temperature at about or less than 25°C, wherein during the polymerization, at least a portion of the isomerized olefin monomers polymerize in the reactant mixture to provide a substantially non-crystalline, ultra-high molecular weight polyolefin.

6. The process of claim 5, wherein the olefin monomers are alpha olefin monomers.

7. The process of claim 6, wherein the alpha olefin monomers comprise homopolymers, terpolymers or copolymers.

8. The process of claim 6, wherein the alpha olefin monomers comprise co-polymers of 1-hexene and 1-dodecene alpha olefins or co-polymers of 1-octene and 1-tetradodecene alpha olefins.

9. The process of claim 5, wherein the olefin monomers are polymerized by bulk polymerization.

10. The process of claim 5, wherein the polymerization of the olefin monomers continues such that polyolefin is present in the reactant mixture at a concentration of at least about 4 weight percent based upon the weight of the reactant mixture, and the polyolefin includes an inherent viscosity of at least about 10 deciliters per gram.

11. The process of claim 5, wherein the at least one co-catalyst includes an alkylaluminoxane.

12. The process of claim 11, wherein the alkylaluminoxane is selected from the group consisting of methylaluminoxane and isobutylaluminoxane.

13. The process of claim 5, wherein the at least one catalyst includes a the transition metal catalyst.

14. The process of claim 13, wherein the transition metal catalyst is a non-metallocene transition metal catalyst.

15. The process of claim 14, wherein the non-metallocene transition metal catalyst includes titanium trichloride.

16. The process of claim 5, wherein the at least one co-catalyst includes a halohydrocarbon.

17. The process of claim 16, wherein the halohydrocarbon is a chloride containing halohydrocarbon.

18. The drag reducing agent of claim 17, wherein the chloride containing halohydrocarbon is ethylene dichloride.

19. The process of claim 5, wherein the isomerized olefin monomers are polymerized by bulk polymerization.

20. The process of claim 5, wherein the polymerization of the olefin monomers continues such that polyolefin is present in the reactant mixture at a concentration of at least about 4 weight percent based upon the weight of the reactant mixture, and the polyolefin includes an inherent viscosity of at least about 10 deciliters per gram.